



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,136	04/13/2004	Lucas M. O'Gary	59095US002	4530
32692 7590 05/02/2007 3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			EXAMINER MARCHESCHI, MICHAEL A	
			ART UNIT 1755	PAPER NUMBER
			NOTIFICATION DATE 05/02/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LegalUSDocketing@mmm.com
LegalDocketing@mmm.com

Office Action Summary

Application No.

10/823,136

Applicant(s)

O'GARY ET AL.

Examiner

Michael A. Marcheschi

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/14/07.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-25, 28 and 29 is/are rejected.
7) ☒ Claim(s) 26 and 27 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 13 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

The amendment to the specification filed 2/14/07 is improper because this amendment refers to the section number defined in the published application and **not** the scanned copy of the specification (i.e. no section numbers are defined in the scanned copy). In view of this, the amendment to the specification is not being entered. Applicants are requested to resubmit this amendment referring to the specification as scanned.

In view of the above, the previous objection, defined below is upheld.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required.

Claim 15 defines the height as "at least 0.5 mm" but the specification fails to provide proper antecedent basis for the "at least 0.5 mm". The specification defines the height as "about 0.5 mm to about 5 mm (page 7, lines 18-19), thus a discrepancy is apparent between the claim and the disclosure (disclosure defines an upper limit not claimed). In view of this, the examiner is unclear as to which is correct. Since claim 15 is an original claim, as filed with the specification, it is suggested that the limitation of claim 15 "at least 0.5 mm" be literally defined in the specification.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 26 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of records fails to teach or suggest these features.

Claims 1, 4, 7, 8, 10, 12, 15, 17, 18 and 28 are rejected under 35 U.S.C. 102(a) as anticipated by Bergsten et al. (051).

Bergsten et al. teaches in sections [0016]-[0023], [0050] and the figures, a nonwoven article comprising a nonwoven substrate having first and second surfaces, wherein the first and second surfaces define a plurality of peaks and valleys in a rectilinear grid, said peaks being uniform having a height as defined. Sections [0016] and [0023] state that the peaks (and a portion of the valleys) can be coated with an adhesive (broadly reads on make coating) and over coated with inorganic substances (i.e. silica which is an abrasive). In addition, section [0050] states that abrasives may be provided on or beneath the wiping member (nonwoven substrate). A second substrate is attached to the nonwoven substrate, the second substrate being a fabric (section [0030]).

The reference anticipates the claims because the reference teaches a nonwoven article comprising a nonwoven substrate having first and second surfaces, wherein the first and second surfaces define a plurality of peaks and valleys in a rectilinear grid, said peaks being uniform

Art Unit: 1755

having a height as defined and the peaks (and a portion of the valleys) can be coated with an adhesive (broadly reads on make coating) and over coated with inorganic substances (i.e. silica which is an abrasive). This latter limitation broadly on an abrasive coating. With respect to the variation in the thickness, as can be seen from the figures, the thickness is relatively constant.

With respect to claims 17 and 18, as can be seen from the figures, these limitations are met.

With respect to claims 10 and 12, the reference teaches that a second substrate is attached to the nonwoven substrate, the second substrate being a fabric. In view of this, all the above claims are anticipated by the reference.

Claims 2, 3, 9, 11, 13, 14 and 16 are rejected under 35 U.S.C. 103(a) as obvious over Bergsten et al. (051) in view of Lux.

Lux teaches in column 4, line 55-column 5, line 20, column 6, lines 2-5, column 8, lines 55-57 and column 10, lines 20-25 that nonwovens are known for abrasive applications and also teaches various thickness known for nonwovens, as well as abrasive sizes. The reference also defines that abrasive coatings on nonwoven webs are conventional in order to impart the desired abrasive character to the nonwoven article. The reference further defines that the use of a make coat/size coat is a conventional way to apply an abrasive coating.

With respect to the thickness values of claims 2, 3 and 16, although the primary reference does not define the thickness for the nonwoven substrate, the substrate of this reference has a thickness and it is the examiners position that one skilled in the art would have appreciated that the desired thickness would be apparent from conventional thickness values for nonwovens that are made into abrasive articles. In other words, the use of a non woven (known for abrasive

Art Unit: 1755

articles) having a conventional thickness, as clearly shown by Lux, is clearly within the scope of, and/or would have been appreciated by, the skilled artisan absent evidence of criticality. With respect to claim 9, the primary reference states that abrasive particles can be beneath the wiping member (nonwoven) and this implies that the second surface of the nonwoven can be have an abrasive coating. Although this reference does not specifically teach the application of an abrasive/binder mixture to coat the nonwoven material, it is the examiners position that one skilled in the art would have found the application of an abrasive/binder mixture to the nonwoven web according to the primary reference obvious motivated by the fact that the primary reference implies that the nonwoven web has an abrasive surface and that the secondary reference teaches a conventional way to make the surface of a nonwoven web have an abrasive character. The examiner acknowledges that the primary reference teaches the application of abrasive particles, only, however, it is the examiners position that the application of abrasive particles by way of using a binder is obvious in order to optimize the bonding of the abrasive particles to the web. With respect to claim 11, the use of a sponge, as the backing, would have been well within the scope of the skilled artisan because the examiner takes official notice that this is a conventionally known backing material and the substitution of one backing material for another is clearly within the scope of the skilled artisan. With respect to the abrasive size (claims 13-14), with the combination being obvious as defined above, one skilled in the art would have found it obvious to use any known conventional abrasive size, such as the size defined by Lux (i.e. the grade defined corresponds to the sizes within the claimed range), as the abrasive particles size according to the primary reference because this abrasive particles size is conventionally known to provide the necessary abrasive character to nonwovens.

Claim 19 is rejected under 35 U.S.C. 103(a) as obvious over Bergsten et al. (051) in view of Nollen et al.

Nollen et al. teaches in column 6, lines 61-68 that enhancement of the physical properties of a non woven article is accomplished by incorporating a reinforcing scrim with said nonwoven.

The use of a reinforcing scrim with the nonwoven according to the primary reference would have been obvious because it is the examiners position that one skilled in the art would have appreciated that physical properties (i.e. tear strength (tensile strength (tensile properties), puncture resistance etc.) of the nonwoven can be can optimized by using a reinforcing scrim, this concept being clearly disclosed by Nollen et al. In view of this, since the optimization of tear strength and puncture resistance are beneficial property in abrasive articles, one skilled in the art would have been motivated to incorporate any known mechanism to optimize said properties.

Claim 20 is rejected under 35 U.S.C. 103(a) as obvious over Bergsten et al. (051) in view Nollen et al. as applied to claim 19 above and further in view of Braunschweig et al.

Braunschweig et al. discloses in the abstract that a conventional way to reinforce a substrate is to incorporate a reinforcing material within the substrate.

Although the scrim might not be defined as being incorporated in the nonwoven, but otherwise attached to the surface (as depicted by Nollen et al.), it is the examiners position that one skilled in the art would have found the incorporation of the scrim obvious by any technique. Since it is clearly known to incorporate a reinforcing material within a substrate, as is clearly shown by Braunschweig et al., one skilled artisan would have appreciated that the scrim

Art Unit: 1755

according to the Bergsten et al. (051) in view of Nollen et al. combination could be incorporated within the substrate. The examiner acknowledges that Braunschweig et al. is not directed to nonwovens, however, this reference is being applied to show conventional ways of reinforcing substrate (irrespective of what the substrate is). Finally, it is the examiners position that the skilled artisan would have appreciated that one known reinforcing technique for one type of substrate could be applied to other substrates absent evidence to the contrary.

The following rejections are all alternative rejections to the one defined above.

Claims 1-18, 21-24 and 28-29 are rejected under 35 U.S.C. 103(a) as obvious over Bergsten et al. (051) in view of Lux.

The primary teaches a similar structure as defined in instant claim 1, with the exception of the abrasive coating (abrasive/binder mixture). This reference, however, teaches that abrasive particles can be attached to the wiping member (nonwoven), thus implying that the surface of the nonwoven web has an abrasive character. Although this reference does not specifically teach the application of an abrasive/binder mixture to coat the nonwoven material, it is the examiners position that one skilled in the art would have found the application of an abrasive/binder mixture to the nonwoven web according to the primary reference obvious motivated by the fact that the primary reference implies that the nonwoven web has an abrasive surface and that the secondary reference teaches a conventional way to make the surface of a nonwoven web have an abrasive character. The examiner acknowledges that the primary reference teaches the application of abrasive particles, only, however, it is the examiners position that the application

Art Unit: 1755

of abrasive particles by way of using a binder is obvious in order to optimize the bonding of the abrasive particles to the web. With respect to the thickness values of claims 2, 3 and 16, although the primary reference does not define the thickness for the nonwoven substrate, the substrate of this reference has a thickness and it is the examiners position that one skilled in the art would have appreciated that the desired thickness would be apparent from conventional thickness values for nonwovens that are made into abrasive articles. In other words, the use of a non woven (known for abrasive articles) having a conventional thickness, as clearly shown by Lux, is clearly within the scope of, and/or would have been appreciated by, the skilled artisan absent evidence of criticality. With respect to the "thickness variation", as can be seen from the figures of primary reference, the thickness is relatively constant. With respect to claim 9, the primary reference states that abrasive particles can be beneath the wiping member (nonwoven) and this implies that the second surface of the nonwoven can be have an abrasive coating. With respect to claim 11, the use of a sponge, as the backing, would have been well within the scope of the skilled artisan because the examiner takes official notice that this is a conventionally known backing material and the substitution of one backing material for another is clearly within the scope of the skilled artisan. With respect to claims 10 and 12, the primary reference teaches this limitation. With respect to the abrasive size (claims 13-14), with the combination being obvious as defined above, one skilled in the art would have found it obvious to use any known conventional abrasive size, such as the size defined by Lux (i.e. the grade defined corresponds to the sizes within the claimed range), as the abrasive particles size according to the primary reference because this abrasive particles size is conventionally known to provide the necessary

Art Unit: 1755

abrasive character to nonwovens. With respect to claims 17-18, the figures clearly depict these limitations. In view of this, the limitations of claims 1-18 are met.

With respect to the method claims 21-24, the primary reference, as combined with the secondary reference above, makes the application of an abrasive/binder slurry an obvious way to form the abrasive coating on the nonwoven according to the primary reference. In other words, Lux teaches conventional ways to apply abrasive particles (primary reference states that abrasive particles can be adhered to the nonwoven) and it is the examiners position that one skilled in the art would have appreciated and found these conventional application techniques obvious as the way to adhere the particles defined by the primary reference. With respect to claim 29, as can be seen from the figures of primary reference, the thickness is relatively constant.

Claim 19 is rejected under 35 U.S.C. 103(a) as obvious over Bergsten et al. (051) in view of Lux, as applied to claim 1 above and further in view of Nollen et al.

The use of a reinforcing scrim with the nonwoven according to the primary reference would have been obvious because it is the examiners position that one skilled in the art would have appreciated that physical properties (i.e. tear strength (tensile strength (tensile properties), puncture resistance etc.) of the nonwoven can be optimized by using a reinforcing scrim, this concept being clearly disclosed by Nollen et al. In view of this, since the optimization of tear strength and puncture resistance are beneficial property in abrasive articles, one skilled in the art would have been motivated to incorporate any known mechanism to optimize said properties.

Claim 20 is rejected under 35 U.S.C. 103(a) as obvious over Bergsten et al. (051) in view of Lux and Nollen et al. as applied to claim 19 above and further in view of Braunschweig et al.

Although the scrim might not be defined as being incorporated in the nonwoven, but otherwise attached to the surface (as depicted by Nollen et al.), it is the examiners position that one skilled in the art would have found the incorporation of the scrim obvious by any technique. Since it is clearly known to incorporate a reinforcing material within a substrate, as is clearly shown by Braunschweig et al., one skilled artisan would have appreciated that the scrim according to the Bergsten et al. (051) in view of Lux and Nollen et al. combination could be incorporated within the substrate. The examiner acknowledges that Braunschweig et al. is not directed to nonwovens, however, this reference is being applied to show conventional ways of reinforcing substrate (irrespective of what the substrate is). Finally, it is the examiners position that the skilled artisan would have appreciated that one known reinforcing technique for one type of substrate could be applied to other substrates absent evidence to the contrary.

Claim 25 is rejected under 35 U.S.C. 103(a) as obvious over Bergsten et al. (051) in view of Lux, as applied to claim 24 above and further in view of King.

King et al. teaches known conventional methods to coat a substrate with an abrasive. One method being the use of a slurry coating with a size coating thereon.

As defined above, the method of claim 24 is defined by the Bergsten et al. (051) in view of Lux. The combination, however, fails to teach the use of a size coating over the slurry coat. It is the examiners position that the use of a size coating over the slurry coating would have been within the scope of the skilled artisan in order to structurally reinforce the bond of abrasive

Art Unit: 1755

particles. In other words, 2 bonds are better than one, the second bond being a result of the size coating. King clearly states that size coats are known to be applied over slurry coating in the formation of coated abrasives.

Applicant's arguments with respect to all the claims have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

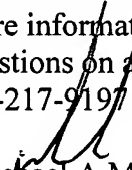
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300

Art Unit: 1755

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

2/07
MM


Michael A Marcheschi
Primary Examiner
Art Unit 1755